

<b>Title</b>	<b>Describe fresh and hardened concrete sampling methods in civil engineering</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>6</b>

<b>Purpose</b>	People credited with this unit standard are able to describe fresh and hardened concrete sampling methods in civil engineering.
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<b>Classification</b>	Infrastructure Civil Engineering > Infrastructure Laboratory
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable organisational and legislative requirements.
- 2 Applicable legislation, regulations, rules, standards and codes include but are not limited to:  
 Health and Safety at Work Act 2015, Hazardous Substances and New Organisms Act 1996, and their associated regulations and subsequent amendments;  
 For fresh concrete:  
 NZS 3112.1:1986 *Methods of test for concrete – Tests relating to fresh concrete*, available from <https://www.standards.govt.nz>;  
 CCANZ publications on Testing: IB 48, IB 49, IB 50, IB 51, IB 53, IB 72 available from: <http://www.ccanz.org.nz/documents.aspx>.  
 For hardened concrete:  
 ASTM C42/C42M-20 *Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete*, and ASTM C823/C823M-12 (2017) *Standard Practice for Examination and Sampling of Hardened Concrete in Constructions*, available from <https://www.astm.org/>;  
 ISO1920-6:2019 *Testing of Concrete – Part 6: Sampling, preparing and testing of concrete cores*, available from <https://www.iso.org/store.html>.
- 3 Definitions  
*Describe* refers to stating the individual components of the test sequentially in terms of the relevant test method and organisational requirements. Components will vary between the tests and include but are not limited to – the sample specifications, equipment requirements, environmental requirements, units of measurement, purpose, and scope of the test. *Describe* does not include the explanation of results, the interaction between tests, or their scientific basis.

*Organisational requirements* refer to instructions to staff on policy and procedures which are formally documented or generally accepted at the worksite. This may include legislation; industry standards and methods; national and international standards and methods; standard operating procedures; specifications; manuals; and manufacturer's information.

## Outcomes and performance criteria

### Outcome 1

Describe fresh and hardened concrete sampling methods in civil engineering.

Range      fresh concrete – snatch and representative samples taken randomly and selected from two of the following scenarios: placed concrete, agitator, paving mixer, open top container, pump outlet;  
hardened concrete – cylindrical drilled cores, sawed beams, sawed cubes.

### Performance criteria

- 1.1          The sampling methods are explained in terms of their procedure, use, and limits.
- 1.2          The documentation requirements for each sampling method are described.

<b>Planned review date</b>	31 December 2025
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 February 2015	31 December 2021
Review	2	23 January 2020	N/A
Rollover and Revision	3	24 October 2024	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

### Comments on this unit standard

Please contact Waihangara Ara Rau Construction and Infrastructure Workforce Development Council [qualifications@waihangaraarau.nz](mailto:qualifications@waihangaraarau.nz) if you wish to suggest changes to the content of this unit standard.